

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claims 1-49 (canceled)

50 (currently amended): A method for immunizing a human against pertussis comprising administering an effective amount of a vaccine comprising a therapeutically effective quantity of a polypeptide comprising the S1, S2, S3, S4, and S5 subunits of pertussis toxin having the same arrangement and configuration as that present in the natural pertussis toxin, wherein said S1 subunit is modified by direct mutagenesis by the substitution of glutamic acid at position 129 with glycine and the substitution of arginine at position 9 with another natural amino acid.

Claims 51-52 (canceled)

53 (previously presented): The method of claim 50, wherein said other natural amino acid substituted at position 9 is glycine.